University of St Andrews

COMPUTING LABORATORY

VAX SYSTEMS TIMETABLE
DATA-PREPARATION SERVICE
BREAK IN SERVICE DURING CHRISTMAS VACATION
COMPUTING IN THE HUMANITIES
SEMINARS
SAVING DISC SPACE
USE OF TERMINALS
MANCHESTER REGIONAL COMPUTER CENTRE
NEW VERSION OF GHOST

NEWSLETTER

January 1983

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VAX 11/780 Systems Timetable

Candlemas Term 1983

Normally the VAX Systems will be up 24 hours a day, 7 days a week, except for the following periods:

Systems Development

Week-days:

From 9.45 pm at 24 hours notice. On occasion a System may have to be re-booted during the day. To minimise any disruption, the re-boots will be done at about 1 pm.

Weekends:

A System may be taken at any time of the weekend at 24 hours notice.

Every 5 to 6 weeks:

"Monthly" Systems Disk dumping prior to PM - 7 am - 9.30 am.

Preventive Maintenance (PM) - from about 9.30 am for up to 5 hours (normally 3 hours)

The following PM dates have been scheduled:

Tuesday 8th Feburary	Tuesday 10th May
Tuesday 22nd March	Tuesday 14th June
Tuesday 5th April	

Operator Covered Time 7 am to 10.00 pm - Monday to Friday

Access to the building 8 am to 9.45 pm - Monday to Friday

Data-Preparation Service

Due to heavy demand for the service at certain peak periods (such as the end of term), for time-critical jobs users should book their anticipated data preparation requirements well in advance. The time required to do the job will be estimated and a reserved time slot scheduled for it.

Prior to recording new data for data-preparation users should consult the Operations Supervisor to ensure that the raw data is presented legibly and in a format suitable for fast data-entry.

Users with large amounts of data should submit it to the Operations Supervisor in small batches as it becomes available instead of one large batch. This will help smooth out the data-preparation work load and should enable the task to be completed earlier.

Break in Service During Christmas Vacation

Both VAX 11/780 Systems had to be shut down over the Christmas break because of a fault that was outwith the control of the Computing Laboratory: both circuits of the air conditioning plant failed on Christmas Eve. The systems were down from 5 pm on Friday 24th to 4.20 pm on Wednesday 29th December 1982 as without cooling from the air conditioning plant the maximum operational temperature would have been exceeded in a few hours. The VAX systems have to be run within the manufacturer's temperature and humidity specification or else the conditions of the maintenance contract will be breached and any resulting damage will not be covered by the contract. The Computers have a thermal interlock to trip off the power once the maximum ambient termperature has been exceeded.

The air conditioning plant was serviced on Thursday 23rd December by the contractors Walker Engineering. One compressor was found to be faulty and was switched off by them and a condensor tripped off. On Friday 24th the second compressor went down with a burnt out motor and as a result the systems were left without any cooling. The problem was reported to the Works Department on Friday evening and after inspection they advised that there was no immediate solution especially as Walker Engineering was closed until 5th January 1983.

However after much effort from Boxing Day onwards, staff of the Works Department did manage to get the air conditioning plant going by improvising and using parts salvaged from the old computer room plant. That the Computing Service was restored on the Wednesday 29th December instead of a week later was due mainly to the efforts of the Works Department staff, to whom the Laboratory must express its thanks on behalf of the users.

VAX Service unattended running

The VAX systems are left running during non-operator covered time overnight, at weekends and during holidays on the clear understanding that if the Systems go down for any reason, then no remedial action will be taken until the next scheduled operator covered period. Users planning to make either batch or interactive use of the VAX Systems at such times do so with this risk in mind.

VAX Maintenance

The Computing Laboratory has a DEC service maintenance contract for the two VAX 11/780 Systems. This is more expensive than the Basic contract and covers the systems from 9 am to 5 pm Monday to Friday except for 10 DEC statutory holidays per year, e.g. 1pm 24th December 1982 to Tuesday 4th January 1983 (except Friday 31st 9am -5 pm) Under the DEC service contract DEC guarantee to have an engineer on site within 4 hours of a fault being reported in engineer covered time (9am - 5 pm).

Air Conditioning Maintenance

The Computer room air conditioning system is maintained by outside contractors: The plant by Walker air conditioning and the controls by Landis and Gyr-Billman Ltd. There are 5 scheduled preventive maintenance visits a year. They respond to reported faults within 24 hours except on statutory holidays, e.g. 24th December to 5th January 1983.

System status enquiries and Terminal Faults

All System status enquiries and terminal faults should be reported to extension 8131 or 8133. After 5.45 pm and at weekends 8133 becomes St Andrews 74401.

Please check the time-table displayed on all Terminal Cluster notice-boards before reporting faults.

Computing in the Humanities

A seminar will be given on this topic on Thursday 3rd February at 4 pm in Seminar Room 1 of the John Honey Building. The speaker is Mr Alastair Pearce, who is the external adviser for Computing in the Arts at the University of Oxford Computing Service. Oxford University is a national centre for Arts computing and its specialist facilities are available to researchers at all U.K. universities.

The seminar will briefly describe the computer analysis of literature, with reference to the input of text, its analysis and the output of the results; Oxford has facilities to assist in these three areas. The seminar will also cover the use of statistics and databases in Arts Computing. Mention will be made of applications in Music.

Mr Pearce will be available on Thursday 3rd and Friday 4th February, during the day, for individual consultations with interested users. Contact Peter Adamson (extension 8129) to arrange a time.

Seminars

The following seminars have been arranged by the Department of Computational Science; they will take place at 4 pm in Seminar Room 1 of the John Honey building, except for the first seminar which will start at 2 pm.

Tuesday 18th January 2 pm: Dr P. Mars (Leicester Polytechnic)

Learning Automata Adaptive Routing Control of Computer Communications Networks.

Wednesday 26th January: Professor R. Burstall (Edinburgh)

Executing Operational Semantics in Prolog

Thursday 3rd February: Alastair Pearce (Oxford)

Computing in the Humanities
(This is a joint seminar with the Computing Laboratory)

Thursday 10th February: B. Groom (RAF Leuchars)

The Phantom Flight Simulator

It is hoped to arrange a visit following this talk to see the simulator.

Thursday 24th February: D. R. Brownridge (Newcastle)

The Newcastle Connection - Hiding Communication Rings from UNIX.

All are welcome to attend.

Saving Disc Space

You are asked to examine your disk directories and make sure that you are using the minimum amount of disk space necessary for your work on the VAX. The user disk on SAVA is now more than 95% full; the situation on SAVB will soon become as critical as this if no action is taken. It is in your own interest to conserve disk space to reduce the chance of wasted effort and time through failed jobs and long edits which cannot be completed due to disk quota problems. It is wasteful of resources for the dumping procedures to make backup copies of files which are no longer required. The following hints may help you in reducing your disk usage.

- Use the PURGE command to get rid of earlier versions of files. If you want to hold two or more versions of a file, use different filenames (rather than version numbers). You can set up suitable PURGE commands in your LOGIN.COM file or (better) use a command procedure at logout time to PURGE unwanted files (the command BYE will do a complete PURGE of all files in your default directory when you logout.)

- Try to avoid keeping two copies of a file with minor differences. Instead use one master copy together with command files containing the edits required to generate the variants.

- Only keep on disk those files which you are currently working on. Use the ARCHIVE command for the long-term storage of files not in current use. Archived files are stored on magnetic tape; if you retrieve a file from the archive, it is not necessary to archive it again since the magnetic tape copy is preserved. Note that when a file is archived, it is automatically deleted from your file space and cannot be retrieved until a month has elapsed.

- Do not retain files which can be recreated automatically from other files. Assuming the normal conventions for file types, files that must be kept include .FOR, .PAS, .BAS, .S (programs), .DAT (data), .RNO and .SIM (input to text formatters) and .COM (command files). Files to be deleted as soon as they are no longer required are .OBJ, .OUT, .EXE, .MEM, .DOC, .LIS and .LOG. Remember to delete your MAIL; this is done by using the DELETE command within the MAIL sub-system after reading each mail message. To delete the .MAI file, you will have to first give yourself permission to do this by the command SET PROT=O:D MAIL.MAI

- Try not to create files containing only a few characters since the minimum number of blocks that a file can occupy is 3.

- Use the command CHOP to remove trailing blanks from files with fixed record lengths, such as files read from magnetic tape using TAPETRANS.

- Use the command "DIRECTORY/SIZE=ALL". This will output, for each file, two numbers. The first is the number of blocks occupied by a file and the second is the number of blocks allocated. If the number of blocks allocated is 3 or more greater than that used, reduce the allocation as follows. Suppose the file TOOBIG.FOR has 11 blocks used and 15 allocated. First, use the COPY command to create a new copy by typing:

```
COPY TOOBIG.FOR *
```

You will find that the new copy will be allocated 12 blocks (allocations are done in units of "clusters" where a cluster contains three blocks). Second, delete the original version.

Use of Terminals

Long jobs

Jobs that take more than 5 minutes elapsed time to run from a terminal should be submitted to the appropriate Batch queue instead. Long jobs run at a terminal prevent other users from making good use of the terminal.

Reserved Terminals

SAVB terminals TTE0 to TTE7 and TTF0 to TTF7 are reserved exclusively for Computer Science students between 9 am and 6pm Monday to Friday and they have priority on these terminals at other times. These terminals and ports are partly financed for the Computer Science department.

University of Manchester Regional Computer Centre

Following a period of trial use of the computing facilities at the University of Manchester Regional Computer Centre the Computing Laboratory has arranged to buy a very small percentage of the resources at Manchester thus enabling interested users to use UMRCC on a regular basis.

The regional service at UMRCC currently consists of two ICL 1900/CDC 7600 systems; however in April and July of this year a CDC CYBER 205 system and an Amdahl 470/V7A respectively, are being installed. A CYBER 205 is comparable in power to a CRAY computer.

Typical use of the UMRCC system from St Andrews will involve logging into the ICL 1904S at UMRCC via a SAVA terminal and British Telecom's PSS system, preparing a job on the 1904S and submitting it to a 7600 for processing. Output can be saved on the 1904S filestore and inspected in a later terminal session. File transfer facilities between St Andrews and Manchester are currently undergoing test.

The resource control system at UMRCC is organised so that the cost of a job is proportional to the CPU time taken on the 7600 multiplied by a priority factor, high priority jobs being processed more quickly and costing more. Resources are allocated on a daily basis, with only a limited amount being accumulated if unused. Thus users who could best make use of these facilities would be ones with a steady and not excessive requirement (in terms of CPU time) for facilities that cannot be satisfied locally. There is a great deal of applications software at UMRCC (type HELP SOFTWARE EXTERNAL on the VAX) and a wider range of plotting facilities; the word length (60 bits) in the CDC 7600 enables high precision results to be obtained in a straightforward manner.

The cost of resources used at UMRCC will normally be met by the Laboratory as a part of its general service; however charges may be incurred through excessive use of PSS. Users wishing to discuss the use of UMRCC further should contact Malcolm Bain (ext 8203).

New Version of Ghost-80 Graphics System

On Tuesday 25th January 1983 a new version of the GHOST-80 graphics system will be released. There are several new facilities available within the new GHOST-80 system and three more 'devices' are now supported.

Improved versions of the curve-drawing routines CURVEO and CURVEC have been introduced, thereby making their complementary routines CURVCD and CURVOD redundant. CURVCD and CURVOD have therefore been removed from the library. It is now also possible to select a curve-drawing method that guarantees to produce a single-valued curve from single-valued data. The new routine CURVEM achieves this. Two more new routines, TYPEST and PLOTST, act exactly like TYPECS and PLOTCS respectively, but in addition accept control strings, embedded within the character string, which may change text attributes for the remainder of the string. This enables character 'conditions' such as font change, italics, underlining and magnification to be changed within a single subroutine call.

The three new 'devices' that are supported are the Benson 9211 electrostatic plotter, the DEC GIGI colour terminal and TRANGRID seqential gridfiles.

TRANGRID files are essentially sequentially organised GHOST-80 picture files and as such are suitable for transfer to any other computer system that runs GHOST-80. Thus a very large range of output devices are now available for the production of pictures created by GHOST-80.

The post-processors for the DEC GIGI colour graphics terminal are used in the same way as those for the Tektronix devices. A quick hardcopy of the contents of the monitor's screen (in black and white only) can be obtained by ensuring that the DECwriter IV situated beside the terminal is switched on and by pressing SHIFT/PF1 on the keyboard. The libraries are called GIGI and GRIDGIGI. Pictures within GHOST-80 gridfiles may be viewed on the terminal by typing GIGI (cf. T4010 for the Tektronix).

The Benson electrostatic plotter is intended for use when final copies of a picture are required. The paper is quite expensive and should not be used without regard to this fact. The GHOST-80 libraries for use with the plotter are called B9211 and GRIDB9211 and are used like all other GHOST libraries with the exception that a third library of Benson software must also be LINKed. A typical sequence might therefore be:

```
$ FORTRAN EXAMPLE
$ LINK EXAMPLE,GHOST/LIB,B9211/LIB,BENSON/LIB
$ RUN EXAMPLE
```

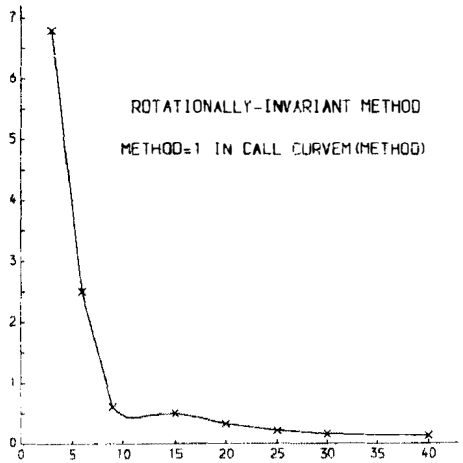
You will be asked for the name of the (vector) file to which graphical output for each picture is to be sent. These files may subsequently be sent for plotting on the electrostatic plotter by using the command PLOT. Benson vector files may also be created directly from GHOST gridfiles with the command B9211.

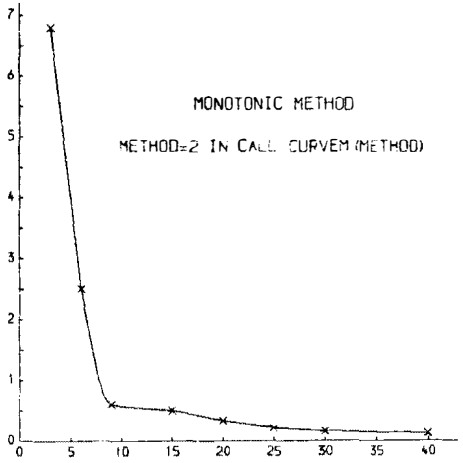
The PLOT command will ask you for the name(s) of the vector files to be plotted and will create a command file, PLOTJCL.COM, that you will (generally) submit to the PLOT$BATCH queue for processing. The Benson plotter may only be used by jobs running in the PLOT$BATCH queue on SAVB. Progress of your job through PLOT$BATCH may be monitored with the usual SHOW QUEUE command. On completion, the log file may be inspected in your top-level directory as usual. Output from the plotter will have a banner automatically added to the end of your plot to identify the owner and will be placed out in the line-printer racks outside the machine room just as printer output is now.

An updated version of the GHOST-80 User Manual is under preparation, but in the meantime further information on the new features of GHOST-80 and the characteristics of the new devices and their use with GHOST-80 may be obtained free of charge from the secretaries, or by typing HELP GHOST NEWS at a VAX terminal.

The old GHOST-80 libraries will be available for a period of 4 weeks after the introduction of the new system. To use the old system just type the command OLDGHOST before LINKing the GHOST library. We would be grateful however if you could let the Laboratory know of any particular reason you may have for using this facility. Please contact Malcolm Bain (CLSMB, ex 8203), in the first instance.

The pictures shown were produced on the Benson 9211 electrostatic plotter. They illustrate the use of the two main methods for drawing curves in GHOST-80. The programs and data for both pictures were the same apart from the call to the routine CURVEM selecting the different methods.





Drawing Curves with GHOST-80